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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,839	11/16/2001	Yukio Nakano	500.40877X00	7590

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EXAMINER

THAI, HANH B

ART UNIT PAPER NUMBER

2161

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,839

Applicant(s)

NAKANO ET AL.

Examiner

Hanh B. Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed June 6, 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/605.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to the Amendment filed 06 June 2005.
2. Claims 1-10 and 24 are pending in this application. In the Amendment filed 06 June 2005, claims 11-23 were cancelled, and claims 1-10 and 24 were amended. This action is made final.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 06 June 2005 has been considered and entered into record. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Arguments

4. Regarding claims 1, 6 and 24, applicant argues that "Regarding claims 1, 6 and 24, Applicants submit that Bridge does not disclose or suggest the limitations in the combination of each of these claims of, inter alia, executing both of the data processing in the plurality of storages and the data rebalance, determining to move data among the plurality of storages and the storage added by the acceptance section based on the copy position information, or confirming presence or absence of an area for storing information for identification of additional storage for storing table data and information indicative of "in rebalance operation" during which data is moved from a plurality of storages to the additional storage in accordance with a predetermined division rule of table data to be stored among the plurality of storages and the additional storage, and in the absence of the area, securing the area when data processing in the plurality of storages is executed." Examiner respectfully disagrees.

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Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997).

Bridge discloses at col.4, line 64 to col. 5, line 14; col.6, lines 57-66; col.22, lines 45-47 and col.23, lines 49-55 the plurality of the storage disks have been rebalanced whereas the storage disk is added or removed from the plurality disk drives to the newly added disk drive. Bridge clearly discloses the data processing in the storage disks and the rebalance operation at col. 23, lines 52-55.

Applicant's arguments with respect to claims 1-10 and 24 regarding the limitation of copying position information to copy source data when a data processing request causing to add a storage and a division rule of table data to be stored among the plurality of storages have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bridge (US 6,405,284 B1) in view of Wilding et al. Wilding et al. (US 6,813,623 B2).

Regarding claim 1, Bridge discloses a database management system connected to a plurality of storages for storing a plurality of data items, comprising:

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- a storage having a first storage area ("104", Fig.1) corresponding to a plurality of storages for storing a plurality of data items and having a second storage area ("114", Fig.1) corresponding to a storage to be added to or disconnected from said plurality of storages (col.4, line 64 to col. 5, line 14; col.6, lines 57-66; col.22, lines 45-47 and col.23, lines 49-55);
- an acceptance section connected to the storage for accepting a data processing request (col.2, lines 10-13), said data processing request including data processing in said plurality of storages and data rebalance between said plurality of storages (col.6, lines 57-66; col.22, lines 45-47 and col.23, lines 49-55); and
- a plurality of executors connected to said acceptance section for sequentially executing both the data processing in the plurality of storages and the data rebalance, each of said plurality of executors comprising means for determining to move data among said plurality of storages and said storage added by said acceptance section based on said copy position information (col.4, line 64 to col. 5, line 14; col.6, lines 57-66 and col.21, lines 20-61. I/O operations corresponding to the executor that executing the data processing in the plurality of storage disks).

Bridge, however, does not explicitly disclose "copy position information to copy source data" and "a storage area correspondence table for data items to be determined to be sharedly stored among the plurality of storages." Wilding discloses a method and apparatus similar to that of Bridge wherein the data position is copied into and to update data position for the next data log (summary and col.11, lines 45-49, Wilding). Wilding

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further discloses the storage area (data area "1" as shown Fig.1) for data records to be determined to be sharedly stored among the plurality of storages.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to manage Bridge's data storage system as a database management system including adding copy position information to a data log and a shared storage, as taught by Wilding, to obtain the invention as claimed. The motivation of doing so would have been to efficiently increase data processing's performance (col.3, lines 31-34, Wilding).

Regarding claim 2, Bridge/Wilding combination discloses a database management system as set forth in claim 1, wherein said storage area correspondence table (col.14, lines 28-29) shows the combinations of predetermined data items to be sharedly shared by said plurality of storages according to said request of addition or disconnection to cause the data rebalance between the storages (col.23, lines 26-45; Fig.7 and corresponding text, Bridge).

Regarding claim 3, Bridge/Wilding combination discloses a database management system as set forth in claim 1, wherein said acceptance section has a rebalance flag indicating that said plurality of storages are being rebalanced due to addition or disconnection to said plurality of storages, and said acceptance section, in response to a data processing request to said data items stored in said plurality of storages, refers to said rebalance flag and reflects data update even on the storages subjected to the data rebalance (col.4, line 64 to col. 5, line 14; col.6, lines 57-66; col.22, lines 45-47 and col.23, lines 49-55, Bridge).

Regarding claims 4 and 9, Bridge/Wilding combination the step of adding data position information to data before subjected to the rebalance execution by said data rebalance request in

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said plurality of storages (col.4, line 64 to col. 5, line 14; col.6, lines 57-66; col.22, lines 45-47 and col.23, lines 49-55, Bridge).

Regarding claims 5 and 10, Bridge/Wilding combination discloses a database management system as set forth in claim 1, further comprising means, in response to a rebalance request of data to be rebalanced in a storage added according to said addition request, for adding data position information to data (summary and col.11, lines 45-49, Wilding).

Regarding claim 6, Bridge discloses a database management program installed in a database management system connected a plurality of storages for storing a plurality of data items via an interface, said program being capable of being read by a computer, said program comprising the steps of:

- setting first information indicative of a plurality of storages for storing the plurality of data items in a first storage area (Bridge discloses a plurality of storages "104", Fig.1 corresponding to the indicative of a plurality of storages);
- setting second information indicative of a storage to be subjected to a request (col.2, lines 10-13) of add or disconnect to said plurality of storages in a second storage area (Bridge discloses a storage "114", Fig.1 corresponding to the indicative of a storage);
- accepting a database processing request at an acceptance section connected to said storages, said database processing request including processing of data in the plurality of storages and data rebalance between said plurality of storages (col.6, lines 57-66; col.22, lines 45-47 and col.23, lines 49-55); and

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- sequentially executing at least any of the data processing in the plurality of storages and the data rebalance in a plurality of executors (col.4, line 64 to col. 5, line 14; col.6, lines 57-66; col.22, lines 45-47 and col.23, lines 49-55 the plurality of the storage disks have been rebalancing whereas the storage disk is added or removed from the plurality disk drives to the newly added disk drive).

Bridge, however, does not explicitly disclose “copy position information to copy source data” and “a storage area correspondence table for data items to be determined to be sharedly stored among the plurality of storages.” Wilding discloses a method and apparatus similar to that of Bridge wherein the data position is copied into and to update data position for the next data log (summary and col.11, lines 45-49, Wilding). Wilding further discloses the storage area (data area “1” as shown Fig.1) for data records to be determined to be sharedly stored among the plurality of storages.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to manage Bridge’s data storage system as a database management system including adding copy position information to a data log and a shared storage, as taught by Wilding, to obtain the invention as claimed. The motivation of doing so would have been to efficiently increase data processing’s performance (col3, lines 31-34, Wilding).

Regarding claim 7, Bridge/Wilding combination discloses a database management program as set forth in claim 6, further comprising a step of storing in said storages a storage area correspondence table (Fig.7, Bridge) showing combinations of predetermined data items to be sharedly stored by said plurality of storages in response to said request of addition or

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disconnection to cause data rebalance between the storages (col.4, line 64 to col. 5, line 14; col.6, lines 57-66; col.22, lines 45-47 and col.23, lines 49-55, Bridge).

Regarding claim 8, Bridge/Wilding combination discloses a database management program as set forth in claim 6, further comprising a step of setting rebalance information indicating that said plurality of storages being rebalanced due to addition or disconnection to the plurality of storages in a rebalance flag, and a step of, in response to a data processing request to said data items stored in said plurality of storages, referring to said rebalance flag and reflecting data update even on the storages subjected to the data rebalance (col. 3, lines 10-22; col.4, line 64-col.5, line 14 and col.22, lines 44-50, Bridge).

Regarding claim 24, Bridge discloses a program read into a computer and run over a database under control of a computer to execute steps for database management, comprising the steps of: at the time of starting the program, confirming presence or absence of an area for storing information for identification of an additional storage for storing table data and information indicative of "in rebalance operation" during which data is moved from a plurality of storages to said additional storage, and, in the absence of the area, securing said area when data processing in said plurality of storages is executed (col.4, line 64 to col. 5, line 14; col.6, lines 57-66; col.22, lines 45-47 and col.23, lines 49-55 the plurality of the storage disks have been rebalancing whereas the storage disk is added or removed from the plurality disk drives to the newly added disk drive reads on the claimed limitations of "presence or absence of an area for storing information" and "rebalance operation").

Bridge, however, does not explicitly disclose "a predetermined division rule of table data to be stored among said plurality of storages." Wilding discloses a method and apparatus

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similar to that of Bridge wherein the data is stored in the data storages determined according to a specific division ("chunk", Fig.1; summary and col.11, lines 45-49, Wilding).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to manage Bridge's data storage system as a database management system including a predetermined division rule, as taught by Wilding, to obtain the invention as claimed. The motivation of doing so would have been to efficiently increase data processing's performance (col3, lines 31-34, Wilding).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh B. Thai whose telephone number is 571-272-4029. The examiner can normally be reached on 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hanh B Thai
Examiner
Art Unit 2161

August 9, 2005


UYEN LE
PRIMARY EXAMINER